

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 78.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-030054**Date Inspected:** 23-Sep-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 1500**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Steward Machine Co.**Location:** Birmingham, AL**CWI Name:** Fred Hudson / Jimmy Brewer**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** E2 Shear Key Anchorages**Summary of Items Observed:**

Quality Assurance Inspector (QAI) Andrew Webster was present on the date and times noted above in order to observe the fabrication and Quality Control (QC) functions performed by Steward Machine Company for the E2 Shear Key Anchorages for the SFOBB project. The following items were observed:

**Steward Machine - Plant 1:**

This QAI performed a walkthrough at the shop to verify plates on site and to observe Steward Machine personnel at work machining and welding. Work performed at the Steward Machine shop as noted below:

CNC Machine #230 milling assembly S3B. (Machining side A); (Turned and machining side B)

The following plates were noted staged throughout the shop in various stages of processing.

Bay 3 – Assembly

S4C. Welded and ready for machining.

Bay 4 – Plates:

S3B-e3. Formed, stressed relieved, partially machined and stud welded.

S3C-e3. Formed, stressed relieved, partially machined and stud welded.

S4C-e4. Formed, stressed relieved, partially machined and stud welded.

Pallet of r3, m3, k3 and j3 plates.

p3 (x6). Cut, beveled and stud welded.

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

S3C assembly plates:

- S3C-a3. Formed, stressed relieved and partially machined.
- S3C-b3. Formed, stressed relieved and partially machined.
- S3C-c3. Formed, stressed relieved and partially machined.
- S3C-d3. Formed, stressed relieved and partially machined.
- S3C-f3. Formed, stressed relieved and partially machined.
- S3C-g3. Formed, stressed relieved and partially machined.
- S3C-h3. Formed, stressed relieved and partially machined.

This QAI noted the above mentioned plates had been blasted and were being fit into the welding jig. Welding began after all of the plates were placed in the jig and tightened into place. The welding was done by qualified welder Daniel Rowe (73). The welding was done to the approved welding procedure (WPS) P2-W126-B. All welding done was monitored by Certified Welding Inspector (CWI) Jimmy Brewer. The root pass was welded on side B. After the root pass on side B was welded it was MPT by the QC Inspector and this QAI. After the MPT was completed the jig was flipped and the root pass was welded on side A. After the root pass on side A was welded it was MPT by the QC Inspector and this QAI. Once all of the MPT was completed and accepted the welding continued on side A.

S4B assembly:

This QAI noted the above mentioned assembly had the straps fit and ready for welding. The welding was done by qualified welder Benjamin Rhodes (481). The welding was done to the approved welding procedure (WPS) P2-W126-B and P2-W128-B. All welding done was monitored by Certified Welding Inspector (CWI) Fred Hudson. The welding continued over onto the night shift. The welding was done by qualified welder Jeffery Hennington (476). All welding done was monitored by Certified Welding Inspector (CWI) Jimmy Brewer. Welding was done on the strap root passes on side B (x8). After the root passes were done they were MPT by the QC Inspector and this QAI the assembly was flipped to side A and the strap root passes (x8) were welded. After the root passes were done they were MPT by the QC Inspector and this QAI. Once all of the MPT was completed and accepted the welding continued on the straps on side A.

### NON-DESTRUCTIVE TESTING (NDT).

The QA performed NDT on the following.

Assembly S3C (Root Pass side A) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S3C (Root Pass side B) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S4B straps (Root pass side A (x8)) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

Assembly S4B straps (Root pass side B (x8)) at Steward Plant 1:

- Visual Testing (VT) & Magnetic Particle Testing (MPT) Accept. (See TL-6028 for detailed information.)

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

The Non Destructive Testing (NDT) listed above were observed performed and accepted by the QC Inspectors prior to the QA Inspector performing the tests. The QC Inspectors performed 100% NDT with the QA Inspector performing over 10% NDT.



### Summary of Conversations:

No significant conversations held on this date for this contract.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Gary Thomas 916-764-6027, who represents the Office of Structural Materials for your project.

---

**Inspected By:** Webster, Andrew

Quality Assurance Inspector

---

**Reviewed By:** Foerder, Mike

QA Reviewer